ADA

Single board Converters

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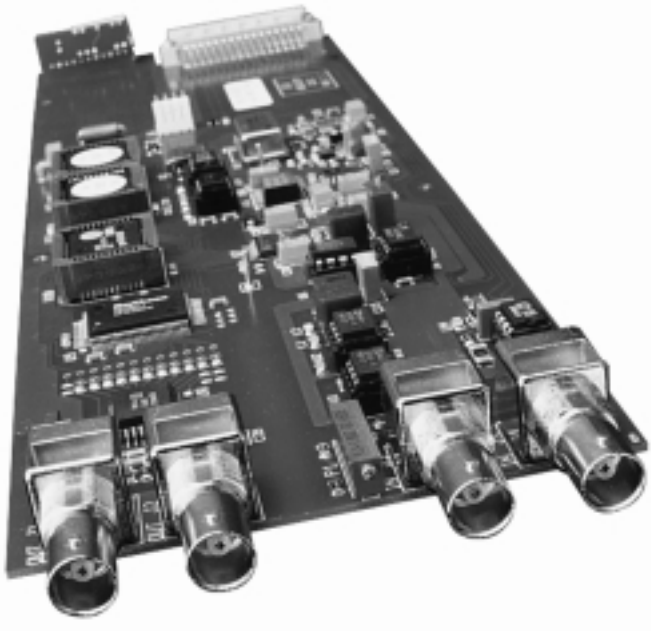

User's Manual

EVS BROADCAST EQUIPMENT

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1. COMPOSITE TO PARALLEL CONVERTER (CD10 Rev.2)

The CD10 Rev.2 converter board has an automatic input level adjustment and the different decoder operation as Composite & Y/C mode selection, Comb filter ON / OFF... are controlled by an 8 DIP switch.

People using those converters boards into EVS products (CDC10 or CDC11) must take care of what follows.

To offer high performance and to provide a perfect Composite Video Signal on the output of the DC10 or DC11 boards, it is important that the incoming composite signal (source) is fully conform to PAL/NTSC standard.

Notably, the burst must have an amplitude of 300 +/- 9 mV and a duration of 2,25 +/- 0,23 µs (10 +/- 1 cycle), and the amplitude of the line synchronising pulse must be 300 +/- 9 mV with a duration of 4,7 +/- 0,10 µs.
If those features are not respected, the outcoming composite signal would have wrong Chrominance and Luminance levels.

1. VIDEO INPUTS

- Selection between standard composite input (Y+C+Sync on one signal) or S-VHS compatible input (Y+Sync on one signal and C on an other signal) by dip switch 8.

- CVBS/ SVHS Y input: loop through input (2 X BNC).
  jumper for internal 75Ω load.
  automatic input level adj. (1 Vpp ± 6dB)

- S-VHS C input: loop through input (2 X BNC).
  jumper for internal 75Ω load.
  Vpp burst input level.

- Secondary 4 pins Mini DIN connector (SVHS standard) for Y/C input.

- Video standard (PAL/NTSC/SECAM) automatic selection.

- Provision to accommodate unstable video signal from VCR and VCR flutter compensation (DIP switch 6).

- 2-line NTSC combfilter/ 4-line PAL combfilter to give very wide Y bandwidth (5 MHz ± 0.3 dB) and very high subcarrier rejection (>40 dB). If required, the combfilter can be disable using DIP switch 7.

- Full 8-bit digital processing at 27MHz to give high quality and for very high time stability (all processing are made in digital including color decoding).

2. PARALLEL 422 OUTPUT

- 25 pin D-connector.
- According to CCIR Rec. 656.
- 8/10 bit compatible output (8-bit significant, 2 LSB bit forced to level "00".
- Serial 422 output as an option.

3. SYNCHRONIZATION

- Automatic, on the video input signal received.

- 422 output sequence locked on the input signal:

  * 6.6 µS delay in PAL/NTSC mode with combfilter off.
  * 71.0 µS delay in NTSC mode with combfilter on.
  * 135.4 µS delay in PAL mode with combfilter on.

4. CONTROL AND SET UP

Decoder operation controlled by 8 DIP switch:

DIP 8	ON				>> Composite mode
		OFF			>> Y/C mode (S-VHS)
DIP 7	ON				>> Comb filter on
		OFF			>> Comb filter off
DIP 6	ON				>> For stable TV video signal
		OFF			>> For VCR video signal
DIP 5	ON				>> STD
		OFF			>> Low Pass filter
DIP	1	2	3	4	>> Chroma level adjustment (16 steps)
	ON	ON	ON	ON	>> Min Chroma level
	ON	ON	ON	OFF	
	ON	ON	OFF	ON	
	ON	ON	OFF	OFF	
	ON	OFF	ON	ON	
	ON	OFF	ON	OFF	
	ON	OFF	OFF	ON	
	ON	OFF	OFF	OFF	
	OFF	ON	ON	ON	
	OFF	ON	ON	OFF	
	OFF	ON	OFF	ON	
	OFF	ON	OFF	OFF	
	OFF	OFF	ON	ON	
	OFF	OFF	ON	OFF	
	OFF	OFF	OFF	ON	
	OFF	OFF	OFF	OFF	>> Max Chroma level

- Optionally operating mode controlled by a RS232 line.

5. MECHANICAL

- Width : 100 mm
- Height: 20 mm
- Depth : 316 mm
- Weight: 0.3 Kg

6. POWER

* +5 VDC, 400 mA typ.
* +12 VDC, 180 mA typ.
* -12 (or -5.2)VDC, 340 mA typ.

7. ENVIRONMENTAL

- Storage -10 °C to +60 °C
- Operation + 10 °C to 40 °C
- Humidity max 70 % non condensing.

2. COMPOSITE TO PARALLEL CONVERTER (CD10 Rev.3)

The CD10 Rev.3 converter board has an automatic input level adjustment and the different decoder operation as Composite & Y/C mode selection, Comb filter ON / OFF... are controlled by an 7-segment display and 3 push buttons.

This automatic input level adjustment can be disable by the user and, in this case, the chrominance level adjustment will be made by using the 7-segment display and the 3 push buttons, and the luminance level adjustment by tuning a trim pot.

The automatic input level adjustment allows to be not dependant on the incoming signal level variations.

However, if it is enable, you must take care of what follows.

To offer high performance and to provide a perfect Composite Video Signal on the output of the DC10 or DC11 boards, it is important that the incoming composite signal (source) is fully conform to PAL/NTSC standard.

Notably, the burst must have an amplitude of 300 +/- 9 mV and a duration of 2,25 +/- 0,23 µs (10 +/- 1 cycle), and the amplitude of the line synchronising pulse must be 300 +/- 9 mV with a duration of 4,7 +/- 0,10 µs.
If those features are not respected, the outcoming composite signal would have wrong Chrominance and Luminance levels.

1. VIDEO INPUTS

- Selection between standard composite input (Y+C+Sync on one signal) or S-VHS compatible input (Y+Sync on one signal and C on an other signal) .

- CVBS/ SVHS Y input: loop through input (2 X BNC).
  jumper for internal 75Ω load.
  Automatic or manual input level adj. (1 Vpp ± 6dB)

- S-VHS C input: loop through input (2 X BNC).
  jumper for internal 75Ω load.

- Secondary 4 pins Mini DIN connector (SVHS standard) for Y/C input.

- Video standard (PAL/NTSC/SECAM) automatic or manual selection.

- Provision to accommodate unstable video signal from VCR and VCR flutter compensation.

- 2-line NTSC combfilter/ 4-line PAL combfilter to give very wide Y bandwidth (5 MHz ± 0.3 dB) and very high subcarrier rejection (>40 dB). If required, the combfilter can be disable (in case of a signal coming from a VTR for example).

- Full 8-bit digital processing at 27MHz to give high quality and for very high time stability (all processing are made in digital including color decoding).

2. PARALLEL 422 OUTPUT

- 25 pin D-connector.
- According to CCIR Rec. 656.
- 8/10-bit compatible output (8-bit significant, 2 LSB bit forced to level "00").
- Serial 422 output as an option.

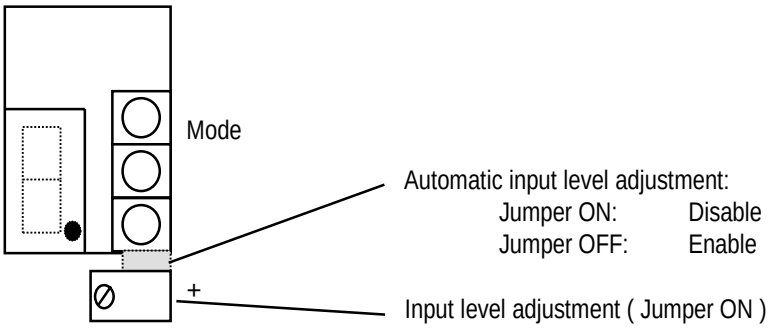
3. SYNCHRONIZATION

- Automatic, on the video input signal received.

- 422 output sequence locked on the input signal:

  * 6.6 µS delay in PAL/NTSC mode with combfilter off.
  * 71.0 µS delay in NTSC mode with combfilter on.
  * 135.4 µS delay in PAL mode with combfilter on.

4. CONTROL AND SET UP



- Unit fully controlled by "on board set-up menu".

- Set-up procedure based on a 7-segment display and 3 push buttons:
  + button, - button and MODE button.

- Push button "MODE" can be used at any time to toggle between the 2 modes:
  "select function" and "adjust selected function".

- In "select function" mode, the display bottom dot is on and the display give the current selected function.
The + and - button can be used to turn through the different functions:

C.	>> Chrominance level adjustment
H.	>> Digitising windows adjustment
F.	>> Filter (Luminance) selection
S	>> Video Standard selection
d.	>> Y/C adjustment
t.	>> Teletext enable /disable
I.	>> Input selection
P.	>> Select current set-up as Power on auto set-up

- In "adjust selected function" mode, the display bottom dot is off and the display give the current value for
the function you can adjust. Use + and - button as follows:

C function	>> +/- to adjust the chrominance level.		
H function	>> +/- to adjust the digitising windows.		
S function	>> +/- to select the video standard:		
	P	PAL B, G, I	(625 lines / 4.43 Mhz)
	3	PAL N	(625 lines / 3.58 Mhz)
	6	PAL M	(525 lines / 3.58 Mhz)
	S	SECAM	
	n	NTSC M (525 lines / 3.58 Mhz)	
	4	NTSC 4.43 Mhz	
	A	Automatic selection (between P& N).	
F function	>> +/- to select Luminance filter:		
	0	normal use	
	1	minimum bandwidth	
	F	maximum bandwidth (peaking)	
d function	>> +/- to adjust the Y/C delay.		
t function	>> +/- to enable Teletext (0: OFF; 1: ON).		
I function	>> +/- to select input:		
	C	CVBS composite input (BNC) Comb filter OFF.	
	b	CVBS composite input (BNC) Comb filter ON.	
	Y	Y/C input (BNC & mini DIN connector).	
	S	Y/C input (BNC & mini DIN connector) for unstable video signal.	
	t	CVBS composite input (BNC) Comb filter OFF for unstable video signal.	

P function >> press 3 times on the + button (the display shows successively 1,2,3) to store the current set-up as power on auto set-up.

- Optionally operating mode controlled by a RS232 line.

5. MECHANICAL

- Width : 100 mm
- Height: 20 mm
- Depth : 316 mm
- Weight: 0.3 Kg

6. POWER

* +5 VDC, 400 mA typ.
* +12 VDC, 180 mA typ.
* -12 (or -5.2)VDC, 340 mA typ.

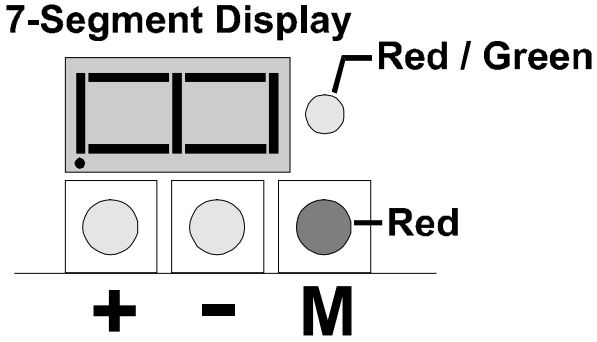
7. ENVIRONMENTAL

- Storage -10 °C to +60 °C
- Operation + 10 °C to 40 °C
- Humidity max 70 % non condensing.

3. COMPOSITE TO SERIAL DIGITAL CONVERTER (CD12)

When used in the composite mode (PAL or NTSC), the input signal is fed via a CD 12 module. Connect the analogue composite feed to the **CVBS/IN** BNC. If the **LOOP** BNC is not used, it must be terminated (75Ω). The **SER 1 OUT** and **SER 2 OUT** both carry the outgoing SDI signal.

The adjustments on this module are shown below.



Green → you must select the parameter you want to adjust. +/- buttons can be used to scroll through parameters.

Red → a parameter has been selected. By pressing +/- buttons, you change the value of this parameter.

Display	Parameter	Default	Range
Y	Y (luminance) component amplitude	(*)	0 - F
U	U component amplitude	(*)	0 - F
u	V component amplitude	(*)	0 - F
O	luminance Offset	0	0 - F
I	tint (hue)	0	0 - F
H	Horizontal phase	5	0 - 9
t	test line mode	Y	Y (Y only) d (data) b (blank) S (Simple decoder)
C	Decoder Configuration	A	A (Adaptative) C (Comb always) S (Simple) n (notch)
S	Standard color		6 (PAL) 5 (NTSC) 4 (NTSC Japan)
G	Corring	0	0 (no) 1 (1 LSB) 2 3 4 (4 LSB)
d	DC restore	1	0 (no digital DC restore) 1 (digital DC restore)
E	Pedestal level	(*)	0 - F
P	Program parameter		

(*) The value of these parameters depends on the selected standard (PAL, NTSC, NTSC Japan).

Buttons + & - : These are used to go UP & DOWN the MENU, when an adjustment mode is chosen, they are used to make the desired adjustments

Button M : This selects / de-selects the chosen menu items.

To store the value of parameters :

Key	[M]	[+]	[+]	[+]	
LED Display	P	1	2	3	Y

To recall previous value of parameters :

Key	[M]	[-]	[-]	
LED Display	P	1	0	Y

Test Line Mode (VBI processing mode) :

Y → C is blanked, Y is digitised unprocessed except set-up processing
d → C is blanked, Y is digitised unprocessed and set-up is not removed
b → Y and C are blanked
S → Simple decoder mode

Standard Color :

If a new standard is selected inside S menu, then all parameters (Y, U, V, O, H, I, t, G, d) are restored to their default value.

Corring :

All small Y variations (adjustable from 1 LSB to 4 LSB) are ignored.

DC restore :

0 → no digital DC restore, P2 (potentiometer in the central part of the board) or the Pedestal Level function can be used to adjust black level. This is *only used with low quality input signal*.
1 → black level is digitally restored. This is the usual operation mode.

Example of adjustment : to adjust input luminance level

1/ With the LED green, use + / - buttons to set menu to **Y**.
2/ Select luminance adjustment mode by pressing button **M**. the LED turns red.
3/ Adjust **luminance** by pressing + / - buttons
4/ When adjustment is correct, **deselect** adjustment mode by pressing **M**. The LED is green again.

Further adjustments can be made as necessary ; when all adjustments have been made and the LED is green, settings can be stored by choosing **P**. on the 7-segment display by pressing +/- buttons. Press the button M to select this mode (LED turns red), button + should then be pressed **3 times**. The 7-segment display should then read **Y**.

4. PARALLEL TO COMPOSITE CONVERTER (DC10)

1. INTRODUCTION

- The P2C board receives a parallel 422 input signal and encode this signal in a composite (PAL/NTSC) video signal.

- The board include a 1H time base corrector to remove jitter and phase noise from the incoming digital video input.

- The composite video output is locked on the provided reference signal (genlock input signal). The horizontal and subcarrier phase are fully adjustable (-7/+12 µS for H and 360° for SC).

- The 422 digital video input signal do not need to have a very precise phase with respect to the composite output phase requested. The 422 digital video input signal just need to be from 2 µS to 65 µS in advance on the composite output phase requested.

- The board delivers one video composite output (Y+C+S) and one S-VHS compatible Y/C output (Y+S/C).

- All video processing including composite encoding are made in digital to give high performance and to get a time invariant operation. The final conversion to analogue is made through 3 high performance 10-bit D/A converters using 27 MHz oversampling technic to get perfect frequency response.

2. PARALLEL 422 INPUT

- 25 pin D-connector.

- According to CCIR Rec. 656.

- 8/10 bit compatible input (8-bit significant)

- Serial 422 input available as an option.

3. GENLOCK INPUT

- 1 Vpp composite video input (regular composite video signal or black burst PAL/NTSC).

- Loop through input (2 X BNC).

- Jumper for internal 75Ω load.

4. VIDEO OUTPUTS

- 3 video outputs to have composite and Y/C output available at the same time.

- 1 Vpp on 75Ω composite video output fully conform to PAL/NTSC standard (one BNC connector).

- 1 Vpp on 75Ω S-VHS compatible luma video output (one BNC connector).

- 300/286 mVpp (burst amplitude) S-VHS compatible chroma 443/358 video output (one BNC connector)

- Video levels, timing, rise and fall time fully conform to the PAL/NTSC video standard.

- User selection between PAL and NTSC operation.

- Video performance: Luma bandwidth 5 MHz (±0.1 dB)
Chroma filter according to CCIR Rec 624-3
Differential gain 0.9%
Differential phase 0.5%

5. SYNCHRONIZATION

- Video outputs are locked on the genlock video input signal sent to the board.

- Horizontal phase (video + sync phase) of the video output signal can be adjusted relatively to the genlock input signal received: -7 µS to +12 µS per 74 nS step.

- Subcarrier phase of the video output signal, can be adjusted relatively to the genlock input signal received: ± 180° per 0.3° step.

- 422 digital input signal can have any phase relatively to the genlock reference signal but to get correct vertical phase the 422 digital input signal must be from 2 µS to 65 µS in advance on the composite output phase requested.

6. CONTROL AND SET UP

- Encoder fully controlled by "on board set-up menu".

- Set-up procedure based on a 7-segment display and 3 push buttons: + button, - button and MODE button.

- Push button "MODE" can be used at any time to toggle between the 2 modes: "select function" and "adjust selected function".

- In "select function" mode, the display bottom dot is on and the display give the current selected function. The + and - button can be used to turn through the different functions:

S. >> adjust Subcarrier phase (genlock)
H. >> adjust Horizontal phase (genlock)
L. >> select number of Line (525/625)
C. >> select the Configuration (Encoder/Blue pattern)
G. >> enable/disable Genlock
P. >> select current set-up as Power on auto set-up
h. >> adjust blanking (Output Vision phase)
Y >> adjust luminance level

- In "adjust selected function" mode, the display bottom dot is off and the display give the current value of the function you can adjust. Use + and - button as follows:

S function >> +/- to adjust the subcarrier phase on a 360° cycle (display="0" to "F").

H function >> +/- to adjust the horizontal phase between -7µS (display="0") and +12 µS (display="F")

L function >> +/- to select 525-line (display="5") or 625-line (display="6").

C function >> +/- to select the regular encoder mode (display="E"), the internal Blue pattern (display="b").

G function >> +/- to enable genlock (display="1") or disable genlock (display="0").

P function >> press 3 times on the + button (the display shows successively 1,2,3) to store the current set-up as power on auto set-up.

Y function>> +/- to adjust luminance level (minum level : the display shows 0; max.level : 9)

- Optionally, the board can be fully controlled by a RS232 line.

7. MECHANICAL

- Width : 100 mm
- Height: 24 mm
- Depth : 316 mm
- Weight: 0.3 Kg

8. POWER

* +5 VDC, 600 mA typ.
* +12 VDC, 190 mA typ.
* -12 (or -5.2) VDC , 110 mA typ.

9. ENVIRONMENTAL

- Storage -10 °C to +60 °C

- Operation + 10 °C to 40 °C

- Humidity max 70 % non condensing.

5. PARALLEL TO COMPOSITE CONVERTER (DC11)

1. INTRODUCTION

- The P2C board receives a parallel 422 input signal and encode this signal in a composite (PAL/NTSC) video signal.

- The board include a 1H time base corrector to remove jitter and phase noise from the incoming digital video input.

- The composite video output is locked on the provided reference signal (genlock input signal). The horizontal and subcarrier phase are fully adjustable (-7/+12 µS for H and 360° for SC).

- The 422 digital video input signal do not need to have a very precise phase with respect to the composite output phase requested. The 422 digital video input signal just need to be from 2 µS to 65 µS in advance on the composite output phase requested.

- The board delivers one video composite output (Y+C+S) and one S-VHS compatible Y/C output (Y+S/C).

- All video processing including composite encoding are made in digital to give high performance and to get a time invariant operation. The final conversion to analogue is made through 3 high performance 10-bit D/A converters using 27 MHz oversampling technic to get perfect frequency response.

2. PARALLEL 422 INPUT

- 25 pin D-connector.

- According to CCIR Rec. 656.

- 8/10 bit compatible input (8-bit significant)

- Serial 422 input available as an option.

3. GENLOCK INPUT

- 1 Vpp composite video input (regular composite video signal or black burst PAL/NTSC).

- Loop through input (2 X BNC).

- Jumper for internal 75Ω load.

4. VIDEO OUTPUTS

- 3 video outputs to have composite and Y/C output available at the same time.

- 1 Vpp on 75Ω composite video output fully conform to PAL/NTSC standard (one BNC connector).

- 1 Vpp on 75Ω S-VHS compatible luma video output (one BNC connector).

- 300/286 mVpp (burst amplitude) S-VHS compatible chroma 443/358 video output (one BNC connector)

- Video levels, timing, rise and fall time fully conform to the PAL/NTSC video standard.

- User selection between PAL and NTSC operation.

- Video performance: Luma bandwidth 5 MHz (±0.1 dB)
Chroma filter according to CCIR Rec 624-3
Differential gain 0.9%
Differential phase 0.5%

5. SYNCHRONIZATION

- Video outputs are locked on the genlock video input signal sent to the board.

- Horizontal phase (video + sync phase) of the video output signal can be adjusted relatively to the genlock input signal received: -7 µS to +12 µS per 74 nS step.

- Subcarrier phase of the video output signal, can be adjusted relatively to the genlock input signal received: ± 180° per 0.3° step.

- 422 digital input signal can have any phase relatively to the genlock reference signal but to get correct vertical phase the 422 digital input signal must be from 2 µS to 65 µS in advance on the composite output phase requested.

6. CONTROL AND SET UP

- Encoder fully controlled by "on board set-up menu".

- Set-up procedure based on a 7-segment display and 3 push buttons: + button, - button and MODE button.

- Push button "MODE" can be used at any time to toggle between the 2 modes: "select function" and "adjust selected function".

- In "select function" mode, the display bottom dot is on and the display gives the current selected function.
The + and - button can be used to turn through the different functions:

S.	>>	adjust Subcarrier phase (genlock)
H.	>>	adjust Horizontal phase (genlock)
L.	>>	select number of Lines (525/625)
C.	>>	select the Configuration (Encoder/Color bars/Ramp)
G.	>>	enable/disable Genlock
Y	>>	adjust Y amplitude (luminance level)
b.	>>	adjust B - Y amplitude
A.	>>	adjust R - Y amplitude
P.	>>	select current set-up as Power on auto set-up

- In "adjust selected function" mode, the display bottom dot is off and the display gives the current value of the function you can adjust. Use + and - button as follows:

S function >> +/- to adjust the subcarrier phase on a 360° cycle (display="0" to "F").

H function >> +/- to adjust the horizontal phase between -7µS (display="0") and +12 µS (display="F")

L function >> +/- to select NTSCJ (displ="4"), regular NTSC(displ="5") or PAL(displ="6").

C function >> +/- to select the regular encoder mode without VBI data (display="E"), encoder mode with VBI data (display="t"), the internal 75% color bar pattern (display="b") or the internal modulated linear ramp pattern (display="L").

G function >> +/- to enable genlock (display="1") or disable genlock (display="0").

Y function>> +/- to adjust luminance level (80 steps) : - 40 LSB (displ="0") to +39 LSB (displ="9").

For standard amplitude select "A" (just after display="9") or select "4") on display and then hit slowly on "+" up to have "5" on display.

b function>> +/- to adjust B - Y level (see Y function)

A function>> +/- to adjust R - Y level (see Y function)

P function >> press 3 times on the + button (the display shows successively 1,2,3) to store the current set-up as power on auto set-up.

- Optionally, the board can be fully controlled by a RS232 line.

7. MECHANICAL

- Width : 100 mm
- Height: 24 mm
- Depth : 316 mm
- Weight: 0.3 Kg

8. POWER

* +5 VDC, 600 mA typ.
* +12 VDC, 190 mA typ.
* -12 (or -5.2) VDC , 110 mA typ.

9. ENVIRONMENTAL

- Storage -10 °C to +60 °C
- Operation + 10 °C to 40 °C
- Humidity max 70 % non condensing.

6. SERIAL DIGITAL TO COMPOSITE CONVERTER (DC12)

0. INTRODUCTION

- The P2C board receives serial 422 input signal and encodes this signal in a composite (PAL/NTSC) video signal.

- The board includes a 1H Time Base Corrector to remove jitter and phase noise from the incoming digital
video input.

-When genlock mode is enabled, the composite video output is locked on the provided reference signal (genlock input signal). The horizontal and subcarrier phase are fully adjustable (-7/+12 µS for H and 360° for SC). In this mode, the serial digital video input signal does not need to have a very precise phase with respect to the composite output phase requested. The serial digital video input signal only needs to be from 3 µS to 66 µS in advance on the composite output phase requested.

-When genlock is disabled, the composite video output is locked on the serial digital video input signal and a delay of +/- 7 µS is introduced by the encoding process.

- The board delivers two video composite outputs (Y+C+S) and optionally Y/C, YUV and RGB outputs .

- All video processing including composite encoding are made in digital to give high performance and to get a time invariant operation. The final conversion to analogue is made through high performance 10-bit D/A converters using 27 MHz oversampling technic to get perfect frequency response.

1. CONNECTIONS

Connect the incoming SDI signal to the "Serial IN" BNC connector. The next connector ("Serial OUT") is a reclocked loop-through of the input. Connect a video reference (CB/BB) to the "REF" BNC connector. When the DC12 is used with a EVS Disk Recorder, the video reference must be the same for both. The PAL/NTSC output signal is available on the "CVBS OUT1" connector. The remaining BNC connector ("OUT2/LOOP") can be configured as a second PAL/NTSC output or as a loop-through for the video reference (see block diagram below for jumper's configuration)

2. SERIAL DIGITAL INPUT WITH LOOP

- One BNC for input, one BNC for loop.

- Input impedance: 75Ω.

- Active loop through with reclocking.

- Automatic cable equalization.

- 270 Mb/s serial input CCIR-601 compatible 525/625.

- 8/10 bit compatible input (10-bit significant)

- Serial 422 input available as an option.

3. GENLOCK INPUT

- 1 Vpp composite video input (regular composite video signal or black burst PAL/NTSC).

- Loop through input capabitity (2 X BNC).

4. VIDEO OUTPUTS

- 1 or 2 video composite outputs (selection by jumper).

- 1 Vpp on 75Ω composite video output fully conform to PAL, NTSC US or NTSC_JAPAN.

- BNC connectors.

- Video levels, timing, rise and fall time fully conform to the PAL/NTSC video standard.

- User selection between PAL and NTSC US or NTSC japan operation.

- Video performance: Luma bandwidth 5 MHz (±0.1 dB)
  Chroma filter according to CCIR Rec 624-3
  Differential gain 0.9%
  Differential phase 0.5%

- Optional piggy-back board for Y/C, YUV and RGB outputs.

5. SYNCHRONIZATION

- Video outputs are locked on the genlock video input signal sent to the board or locked on the serial input signal (user selectable).

- Horizontal phase (video + sync phase) of the video output signal can be adjusted relatively to the genlock input signal received: -7 µS to +12 µS per 2 nS step.

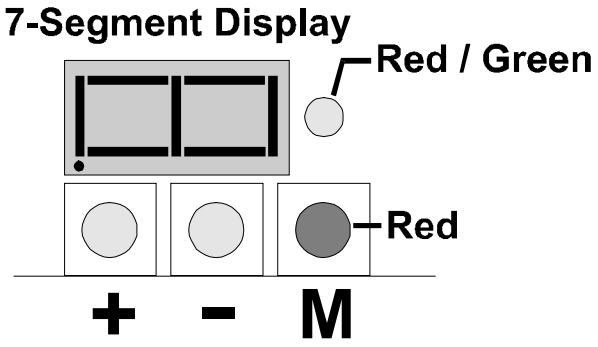
- Subcarrier phase of the video output signal, can be adjusted relatively to the genlock input signal received: ± 180° per 0.3° step.

- 422 digital input signal can have any phase relatively to the genlock reference signal but to get correct vertical phase the serial digital input signal must be from 3 µS to 66 µS in advance on the composite output phase requested.

-When genlock is disabled, the composite video output is locked on the serial digital video input signal and a delay of +/- 7 µS is introduced by the encoding process.

6. CONTROL AND SET UP

- Encoder fully controlled by "on board set-up menu".



Green → you must select the parameter you want to adjust. +/- buttons can be used to scroll through parameters.

Red → a parameter has been selected. By pressing +/- buttons, you change the value of this parameter.

Display	Parameter	Default	Range
S	Genlock Subcarrier Phase	(*)	0 – F
H	Genlock Horizontal Phase	(*)	0 – F
Y	Luminance (Y) Amplitude	(*)	0 – F
U	B-Y (U) Amplitude	(*)	0 – F
U	R-Y (V) Amplitude	(*)	0 – F
E	Set-up Amplitude	0	0 – F
H	Picture Position	0	0 – 9
T	Teletext Mode	0	0 (no VBI data) 1 (VBI data without set-up) 2 (VBI data with set-up)
C	Config mode	E	E (encoder mode) L (internal linear ramp mode) b (internal 75% color bar mode)
G	Genlock Mode	1	0 (locked on 422 data) 1 (locked on external reference)
L	Line Mode	6	6 (PAL) 5 (NTSC US) 4 (NTSC Japan)
P	Program parameter		

(*) The value of these parameters depends on the selected standard (PAL, NTSC, NTSC Japan).

Buttons + & - : These are used to go UP & DOWN the MENU, when an adjustment mode is chosen, they are used to make the desired adjustments

Button M : This selects / de-selects the chosen menu items.

To store the value of parameters :

Key		[M]		[+]		[+]		[+]	
LED Display	P		1		2		3		S

To recall previous value of parameters :

Key		[M]		[-]		[-]	
LED Display	P		1		0		S

Example of adjustment : to adjust output luminance level

1/ With the LED green, use + / - buttons to set menu to **Y**.
2/ Select luminance adjustment mode by pressing button **M**. the LED turns red.
3/ Adjust **luminance** by pressing + / - buttons
4/ When adjustment is correct, **deselect** adjustment mode by pressing **M**. The LED is green again.

Further adjustments can be made as necessary ; when all adjustments have been made and the LED is green, settings can be stored by choosing P. on the 7-segment display by pressing +/- buttons. Press the button M to select this mode (LED turns red), button + should then be pressed 3 times. The 7-segment display should then read S.

- Optionally, the board can be fully controlled by a RS232 line.

7. MECHANICAL

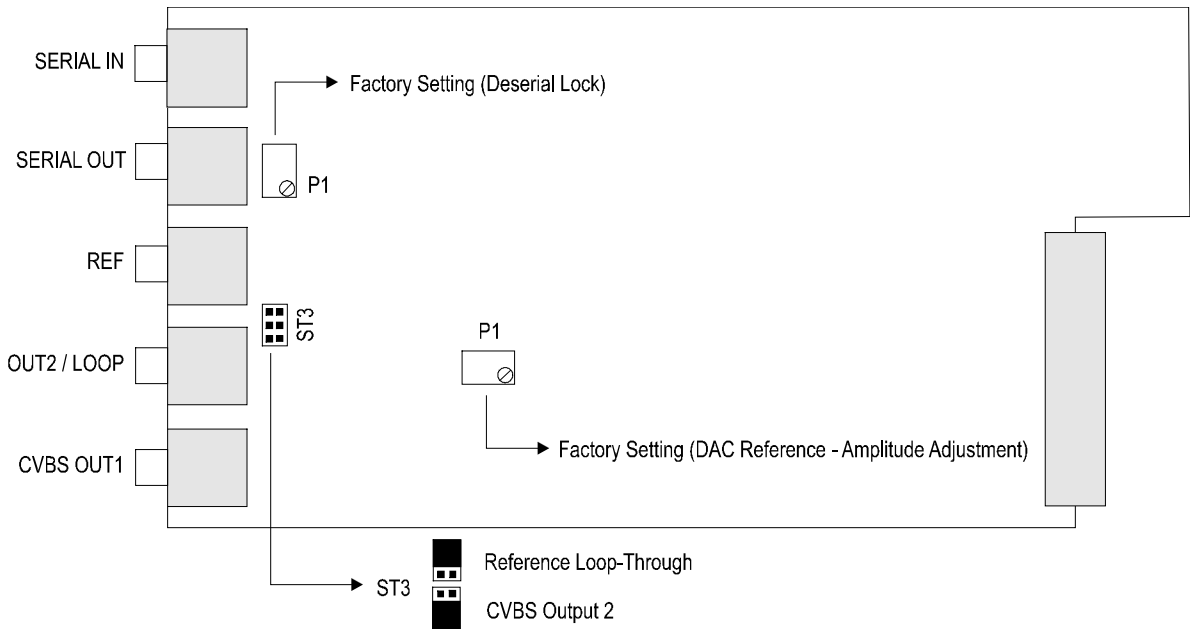
- Width : 100 mm
- Height: 24 mm
- Depth : 316 mm
- Weight: 0.3 Kg

8. POWER

* +5 VDC, 500 mA typ.
* -5 VDC ,380 mA typ.
* +12 VDC, 190 mA typ.
* -12 VDC , 30 mA typ.

9. ENVIRONMENTAL

- Storage -10 °C to +60 °C
- Operation + 10 °C to 40 °C
- Humidity max 70 % non condensing.



7. PARALLEL TO RBG/YUV CONVERTER (DC30)

1. INTRODUCTION

- The P2RGB board receives a parallel 422 input signal and generate RGB or Y Cb Cr analogue output signals.

- The output signals are locked on the 422 signal received.

- The board has double buffered outputs: main outputs on 3 BNC connectors and monitoring outputs on 9-PIN SUBD connector (for SCART compatible video monitor).

2. PARALLEL 422 INPUT

- 25 pin D-connector.

- According to CCIR Rec. 656.

- 8/10 bit compatible input (8-bit significant)

- Serial 422 input available as an option.

3. VIDEO OUTPUTS

- Selection between RGB or Y Cb Cr mode.

- 3 double buffered video outputs:

  3 X BNC connector with R/Y, G/Cb, B/Cr outputs
  +
  1 X 9-PIN SUBD with R/Y, G/Cb, B/Cr, Sync and +9 Volt to connect
  to SCART compatible video monitor.

- Capability to insert composite sync on any output(s).

- Video output level externally adjustable: 700 mV for video and 300 mV for sync on delivery.

- Output impedance: 75Ω.

- Video performance: Bandwidth 5 MHz (±0.3 dB)

4. SYNCHRONIZATION

- Video outputs are locked on the 422 video input signal received (2.25 µS delay between digital input and analogue output).

- Automatic selection between 625/525 line operation.

5. CONTROL AND SET UP

- Unit fully controlled by "on board set-up menu".

- Set-up procedure based on a 7-segment display and 3 push buttons: + button, - button and MODE button.

- Push button "MODE" can be used at any time to toggle between the 2 modes: "select function" and "adjust selected function".

- In "select function" mode, the display bottom dot is on and the display give the current selected function.
The + and - button can be used to turn through the different functions:

F. >> select Format (RGB or YUV)
b. >> select bit mode (to enable a bit or all bits)
d. >> select delete mode (to mask from 0 up to 7 LSB bit)
1. >> select channel 1 (Y/R output) operating mode
2. >> select channel 2 (U/G output) operating mode
3. >> select channel 3 (V/B output) operating mode
P. >> select current set-up as Power on auto set-up

- In "adjust selected function" mode, the display bottom dot is off and the display give the current value for the function you can adjust. Use + and - button as follows:

F function format >> +/- to select the YUV output format (display="y") or the RGB output (display="G").

b function >> +/- to select the bit(s) to display at the output. Display="0" to "8".
When display="8", the 8 bits of the 422 8-bit input signal are displayed at the output (regular operating mode). When display="7" the output monitors only the state of the bit 7 (MSB) of the 422 8-bit input signal
... display="0" monitor state of bit 0 (LSB form 422 8-bit input signal).

d function >> +/- to select delete bit mode. Display="0" to "7".
When display="0", 0 LSB bit from the 422 8-bit input signal are deleted (regular operating mode). When display="1", 1 LSB bit from the 8-bit input signal are deleted/masked ....display="7", the 7 LSB bits are deleted.

1 function >> +/- to select the operating mode for output channel 1 (Y/R).
Display="E" to enable the operation of this channel (regular operation),
display="d" to disable this channel and display="C" to complement/invert this channel.

2 function >> +/- to select the operating mode for output channel 2 (U/G).
Same principle as channel 1.

3 function	>> +/- to select the operating mode for output channel 3 (V/B). Same principle as channel 1.
P function	>> press 3 times on the + button (the display shows successively 1,2,3) to store the current set-up as power on auto set-up.

- Optionally, the board can be fully controlled by a RS232 line.

7. MECHANICAL

- Width : 100 mm
- Height: 24 mm
- Depth : 316 mm
- Weight: 0.3 Kg

8. POWER

* +5 VDC, 490 mA typ.
* +12 VDC, 110 mA typ.
* -12 VDC, 35 mA typ.
* -12 VDC(or -5.2) VDC , 110 mA typ.

9. ENVIRONMENTAL

- Storage -10 °C to +60 °C

- Operation + 10 °C to 40 °C

- Humidity max 70 % non condensing.

8. YUV / RGB TO PARALLEL CONVERTER (CD30 -1)

1. VIDEO INPUTS

- Y, Cr, Cb, R, G, B, Sync input.

- input level adjustable.

- BNC connectors.

- 75 Ω input impedance.

- Analogue filtering according to CCIR 601 (CD30)
- Analogue filtering certified CCIR 601 with Faraday filter (CD30-1).

2. PARALLEL 422 OUTPUT

- 25 pin D-connector.

- According to CCIR Rec. 656.

- 8/10-bit compatible output .

- Serial 422 output as an option.

3. SYNCHRONIZATION

- On the Y video input signal received or on the external sync input.

- 422 output sequence locked on the input signal:

  1 µS delay between analogue input and digital output.

4. CONTROL AND SET UP

- Selection between 625 or 525-line operation by jumper

- Adjustable horizontal phase (Digitising windows : +/- 1,5 µS).

- Adjustable Y/C delay : Range +/- 500 nS step 18 nS.

5. MECHANICAL

- Width : 100 mm
- Height: 20 mm
- Depth : 316 mm
- Weight: 0.3 Kg

6. POWER

* +5 VDC, 400 mA typ.
* +12 VDC, 180 mA typ.
* -12 (or -5.2)VDC, 340 mA typ.

7. ENVIRONMENTAL

- Storage -10 øC to +60 øC
- Operation + 10 øC to 40 øC
- Humidity max 70 % non condensing.

8. JUMPER SETTING

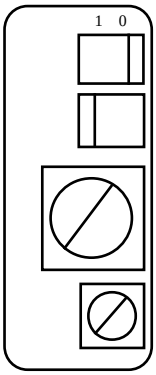
- 3 Jumpers RGB / YUV : to select the input signals between RGB and YUV.

- Jumper IE : synchronization on the Input signal (Y or R or G or B) or on the External sync input.

- Jumper HL : the external sync input signal can be a Hight (from 2 to 4 Volts) or Low level (from 0,3 to 4 Volts).

- Jumper Y/C F : Fine adjustment for the delay between Y and C (+/- 18 nS).

9. FRONT PANEL CONTROL



1 : 525 lines / 2 : 625 lines

1 : Fine tuning / 0 :Coarse tuning for Y/C

Coarse tuning : +/- 380 nS

Fine tuning : +/- 38 nS (16 steps)

Digitising windows tuning (+/- 1,5 µS)

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